

COMPUTER SCIENCE, BACHELOR OF SCIENCE

The program in computer science prepares students for careers as systems programmers in a scientific and/or engineering environment and for graduate work in computer science. Mathematics and engineering courses supplement a strong core of computer science courses, enabling students to design and implement software that requires complicated computations, data structures and interfaces.

Curriculum

The matrix below is a sample plan for all coursework required for this program.

Course	Title	Hours
Freshman		
Fall		
ENGL 1013	Composition I ¹	3
CSEC 1003	Introduction to Cybersecurity	3
COMS 1333	Web and Mobile Technologies	3
TECH 1001	Orientation to the University ²	1
MATH 2914	Calculus I	4
Hours		14
Spring		
ENGL 1023	Composition II ¹	3
CSEC 1113	Introduction to Networking	3
COMS 1011 & COMS 1013	Programming Foundations I Lab and Programming Foundations I	4
MATH 2924	Calculus II	4
Hours		14
Sophomore		
Fall		
COMM 2173	Business and Professional Speaking ³	3
COMS 2203	Programming Foundations II	3
COMS 2703	Computer Hardware and Architecture	3
MATH 2703	Discrete Mathematics	3
SS 1XXX	Social Science Courses ¹	3
Hours		15
Spring		
ENGL 2053	Technical Writing	3
SCIL 1XXX	Science with Laboratory ¹	4
COMS 2213	Data Structures	3
COMS 2223	Computer Organization and Programming	3
COMS 2163	Scripting Languages	3
Hours		16
Junior		
Fall		
COMS 3703	Advanced Operating Systems	3
FAH 1XXX	Fine Arts and Humanities Courses ¹	3
COMS 3213	Algorithm Design and Analysis	3
COMS 2323	Programming in Python	3
Approved 3000-4000 level Elective		3
Hours		15
Spring		
COMS 3053	Ethical Issues in Technology	3
SCIL 1XXX	Science with Laboratory ¹	4
COMS 3233	Database Design and Implementation	3
COMS 3313	Software Engineering	3

Approved 3000-4000 level Elective		3
Hours		16
Senior		
Fall		
USHG 1XXX	U.S. History and Government ¹	3
FAH 1XXX	Fine Arts and Humanities Courses ¹	3
STAT 3153	Applied Statistics	3
COMS 4913	Capstone I	3
COMS 4103	Organization of Programming Languages	3
Hours		15
Spring		
SS 1XXX	Social Science Courses ¹	3
COMS 4413	Parallel and Distributed Computing	3
MATH 4003	Linear Algebra I	3
COMS 4923	Capstone II	3
Approved 3000-4000 level Elective		3
Hours		15
Total Hours		120

¹ See appropriate alternatives or substitutions in "General Education Requirements (<https://catalog.atu.edu/undergraduate/general-education-requirements/>)."

² TECH 1013 Introduction to the University is a substitution for TECH 1001 Orientation to the University.

³ COMM 2003 Public Speaking is a substitution for COMM 2173 Business and Professional Speaking.